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## Editorial

Hello Readers!

This is the third issue of MIYCN-IAPSM Newsletter, an initiative of the Maternal, Infant and Young Child Nutrition (MIYCN) National Working Group of the Indian Association of Preventive and Social Medicine (IAPSM).

This is an effort to bring to you the latest developments in the field of Maternal, Infant and Young Child Nutrition in a short and crisp manner. The authors are experts in the field and make special efforts to review, sift, synthesize, the technical information and present in a easy to read format.

This issue has four special articles. They focus on wide-ranging issues i.e. Pre-conceptual nutrition, Gap assessment for introduction of MIYCN in medical curriculum for undergraduates, MAA program update and Simplified method to detect maternal nutrition at the community level. These issues encompass the academic needs, the community needs and programmatic components.

We hope that you will find these articles relevant and interesting. Please share with us your feedback at [miycn.iapsm@gmail.com](mailto:miycn.iapsm@gmail.com) . We invite you to submit articles for the next issue of this newsletter at the same email id.

We thank the authors for their wonderful submissions, and Alive & Thrive, India for their full support. I acknowledge the efforts of Dr Ravneet Kaur, the Managing Editor, for all support in bringing out this newsletter.

Look forward to hear from you!

Dr Amir Maroof Khan

Editor

MIYCN-IAPSM Newsletter

# A FRAMEWORK FOR MOTHER AND BABY FRIENDLY HEALTH SYSTEM

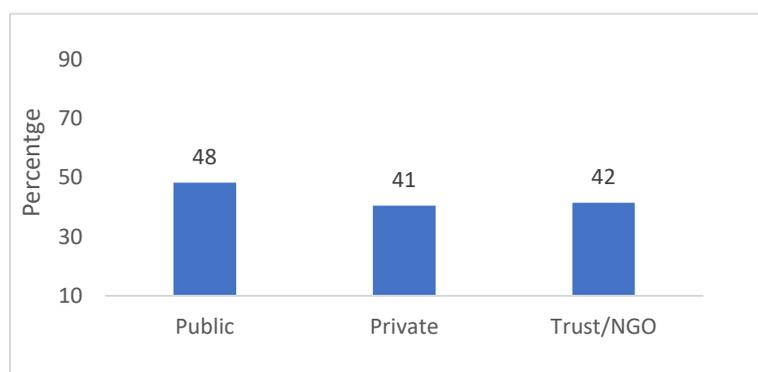
Alive & Thrive

The first 1,000 days of a child's life from conception through age two is a critical window of opportunity to ensure child survival, optimal growth, cognitive development, and lifelong health. Infant and Young Child Feeding (IYCF) and maternal nutrition are recognized as the most effective set of interventions to prevent child deaths, disease, and undernutrition across generations (Lancet 2013). Despite declines in maternal, infant and child mortality and existence of a favourable policy environment with evidence-based strategies<sup>1</sup>, progress in achieving high coverage of maternal infant and young child nutrition (MIYCN) has lagged in India.

There are several immediate ways to improve maternal nutrition and IYCF practices by leveraging opportunities in the existing health system. For example, rates of institutional deliveries have risen

**Figure 1: Breastfeeding within 1 hour in institutional deliveries (NFHS-4)**

(NRHM) in 2005, from 40.8% in 2005-2006 (NFHS 3) to currently at 78.9% (NFHS 4). Institutional



tremendously since the launch of the National Rural Health Mission

(NRHM) in 2005, from 40.8% in 2005-2006 (NFHS 3) to currently at 78.9% (NFHS 4). Institutional

deliveries are key to improving new born and infant practices because it

means more infants are being born in conditions where their mothers

and families can receive support and clear guidance for adopting

optimal nutrition and feeding practices. However, despite an

increase in the rates of institutional delivery, the rate of infants who

breastfeed within an hour of birth

as per NFHS 4 data is only 41.6%. Figure 1 shows rate of EIBF in institutional deliveries disaggregated by type of facility. This illustrates a missed opportunity for new-borns; by missing out on early breastfeeding they do not receive their first inoculation against death and disease. Similarly, a high level (over 80%) registration of pregnant women in the health system has not translated in adequate provision of maternal nutrition care. As per NFHS 4 data only 30% pregnant women consumed 100 iron and folic acid (IFA) tablets.

In 1989, WHO and UNICEF published the 'Ten Steps to Successful Breastfeeding (the Ten Steps)', within a package of policies and procedures that facilities providing maternity and new born services should implement to support breastfeeding. In 1991, WHO and UNICEF launched the Baby-friendly Hospital Initiative (BFHI), to help motivate facilities providing maternity and new born services worldwide to implement the Ten Steps. In 1999, India participated in an international workshop in Mexico where 25 countries endorsed the concept of "Building Women-Friendly Health Services ". The Mexico meeting concluded that women-friendly services should provide care of high technical quality, be accessible, affordable and culturally acceptable, empower and satisfy users, as well as support and motivate providers. Following this in 2011, under the leadership of Department of Obstetrics & Gynaecology, All India Institute of Medical Sciences and supported by UNICEF, a core group was

<sup>1</sup> Reproductive Maternal New-born Child and Adolescent Health or RMNCH+A strategy, India New-born Action Plan, National Guidelines Enhancing Optimal Infant and Young Child Feeding Practices

formed to develop specific ‘Mother and Baby Friendly’ service standards. The group proposed ten standards for mother and baby friendly facilities which were focused on the continuum of care and rights of women to have access to quality care for themselves, and for their infants. Further it suggested that the mother and baby friendly services standards should not be standalone but be aligned with the already available global and national guidelines, standards and protocols such as Baby Friendly Hospital Initiative (BFHI), Family Friendly Hospital Initiative (FFHI), Indian Public Health Standards (IPHS) etc.

Since then there have been considerable improvements in the infrastructure and provision of integrated maternal and new born services in both public and private health facilities but optimal levels of coverage are yet to be achieved. There is need to focus on service provider behavioural dimensions to ensure quality in provision of MIYCN services and build knowledge, competency, skills and motivation of health professionals at all levels to implement globally recommended practices and procedures to protect, promotion and support of maternal nutrition and IYCF practices in facilities. During the recently concluded ‘World Breastfeeding Week 2018 celebrations, a ‘Call to Action on Breastfeeding and Infant and Young Child Feeding’ was signed by all stakeholders which also included the action to strengthen implementation of the MAA programme fully implementing the ‘Ten Steps’ in both public and private health facilities, including monitoring and accreditation. The ‘Call to Action’ clearly highlighted the need for greater engagement with private sector given that the health service provision by private sector ranges from around 60% to 70% in rural and urban setting respectively<sup>2</sup>. Private Health care providers have an important role in not only in promoting optimal maternal nutrition and IYCF practices but also in ensuring these practices are followed.

The following draft framework builds on the ‘Ten steps to successful breastfeeding’ and ‘Revised Baby Friendly Hospital Initiative’ by WHO and UNICEF to include maternal care and complementary feeding practices to cover the entire ‘1000 days’ period of continuum of care.

## 1. Critical management procedures

	<p><b>1a. The Infant Milk Substitutes (IMS), Feeding Bottles and infant foods (Regulation of production, supply and distribution) Act 1992, amended in 2003</b></p> <ul style="list-style-type: none"> <li>▪ Not promoting infant formula, bottles or teats</li> <li>▪ Comply fully with the IMS Act provisions</li> </ul>
	<p><b>1b. Maternal, Infant and Young Child Nutrition (MIYCN) policy:</b></p> <ul style="list-style-type: none"> <li>▪ Making provision of maternal nutrition services and counselling, breastfeeding and complementary feeding care and counselling at appropriate service delivery points as standard practice</li> <li>▪ Have a written MIYCN policy that is routinely communicated to staff and parents.</li> </ul>
	<p><b>1c. Monitoring and data-management systems:</b></p> <ul style="list-style-type: none"> <li>▪ Keeping track of provision of maternal nutrition care and support for breastfeeding</li> <li>▪ Establish ongoing monitoring and data-management systems</li> </ul>

<sup>2</sup> 71st National Sample Survey (NSS) 2014

## HOSPITAL POLICIES

Hospital policies help make sure that all mothers and babies receive the best care

## STAFF COMPETENCY

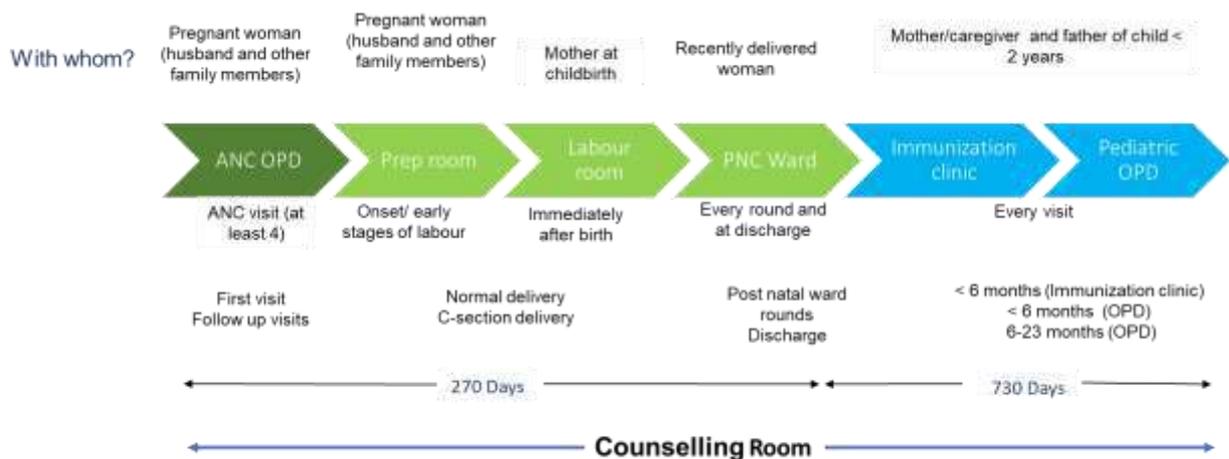
Well-trained health workers provide the best support for MIYCI



- Ensure that staff (doctors, nurses, counsellors) have sufficient knowledge, competence and skills to support MIYCN practices.
- Training staff on supporting and counselling mothers and families on maternal nutrition, breastfeeding and complementary feeding.
- Orientation of health staff to support skin to skin contact and initiation of breastfeeding post caesarean delivery
- Assessing health workers' knowledge and skills routinely and provide support to improve their performance

## 2. Key clinical practices

Figure 2: Service delivery opportunity across first 1000-days



## ANTENATAL CARE

With the right support and counselling, most women can adhere to maternal nutrition and breastfeeding practices.



- Emphasize on importance of Maternal Nutrition during antenatal visit
- Educate/counsel on maternal diet diversity, frequency and adequacy
- Track gestational weight gain at each visit and educate/counsel optimal weight gain during pregnancy
- Take adequate measures for poor or excess gestational weight gain during a month
- Provide and counsel on IFA and calcium supplementation
- Test for haemoglobin and manage mid/moderate /severe anaemia as per national guidelines
- Counsel & help prepare a mother for early & exclusive breastfeeding

## CARE RIGHT AFTER BIRTH

Snuggling skin-to-skin helps breastfeeding get started



- Helping mothers to put their baby to the breast right away
- Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth.
- Support mothers having C-Section with regional anaesthesia to do skin to skin contact and initiate breastfeeding in operation room or in recovery room
- Support mothers having C-Section with general anaesthesia to do skin to skin contact and initiate breastfeeding with support as soon she is alert and responsive.

## SUPPORT WITH BREASTFEEDING

Breastfeeding is natural, but most mothers need help at first



- Support mothers to initiate and maintain breastfeeding and manage common difficulties.
- Checking positioning, attachment and suckling
- Giving practical breastfeeding support
- Helping mothers with common breastfeeding problems

## SUPPLEMENTING

Giving babies formula in the hospital makes it hard to get breastfeeding going



- Do not provide breastfed new-borns any food or fluids other than breast milk, unless medically indicated
- Prioritizing expressed breast milk or donor human milk for sick neonate esp. when mother's milk is not available/when a supplement is needed

## ROOMING-IN

Mothers need to be near their babies to notice and respond to feeding cues



- Enable mothers and their infants to remain together and to practise rooming-in throughout the day and night.
- Making sure that mothers of sick babies can stay near their baby

<p><b>RESPONSIVE FEEDING</b></p> <p>Breastfeeding babies whenever they are ready helps everybody</p>		<ul style="list-style-type: none"> <li>▪ Support mothers to recognize and respond to their infants' cues for feeding.</li> <li>▪ Not limiting breastfeeding times</li> </ul>
<p><b>FEEDING BOTTLES, TEATS AND PACIFIERS</b></p> <p>Everything that goes in the baby's mouth needs to be clean</p>		<ul style="list-style-type: none"> <li>▪ Counsel mothers on the use and risks of feeding bottles, teats and pacifiers.</li> </ul>
<p><b>CARE AT DISCHARGE</b></p> <p>Learning to breastfeed takes time and mothers need to continue to take care of themselves</p>		<ul style="list-style-type: none"> <li>▪ Coordinate discharge so that parents and their infants have timely access to ongoing support and care. Referring mothers to community resources for breastfeeding support</li> <li>▪ Working with communities to improve breastfeeding support services.</li> <li>▪ Advise lactating mothers to continue IFA for 180 days postpartum and calcium supplementation till 6 months.</li> <li>▪ Counsel lactating mother on diet diversity, frequency and adequacy</li> </ul>
<p><b>PAEDIATRIC/ IMMUNIZATION OP</b></p> <p>Mothers need continued support continue breastfeeding and initiate timely complementary feeding</p>		<ul style="list-style-type: none"> <li>▪ Counsel on exclusive breastfeeding, benefits for baby and mother, breastfeeding in illness</li> <li>▪ Counselling on age appropriate frequency and diet diversity for complementary feeding with continued breastfeeding</li> </ul>

## References

1. **Implementation guidance: protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services – the revised Baby-friendly Hospital Initiative.** ISBN 978-92-4-151380-7. © World Health Organization 2018
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3. **Women-friendly health services Experiences in maternal care,** <https://www.unicef.org/health/files/womenfriendlyhealthservices.pdf> .January1999. WHO/UNICEF/UNFPA

## **Pre-conceptional Nutrition: A missed window of opportunity in MIYCN**

**Ravneet Kaur, Nitika Sharma (AIIMS, New Delhi)**

Preconception period is the time prior to or between pregnancies. Preconception care forms an important, but perhaps the most neglected element of continuum of care. Any gap in the continuum of care consequentially has deleterious effects on maternal and child health. However, in the changing times, preconception care has gained interest on a global level. Preconception care is the provision of biomedical, behavioural and social health interventions to women and couples before conception occurs to promote their wellbeing and to improve the pregnancy and child health outcome. Ideally, preconception care should begin at least three months before a woman becomes pregnant so that she is in the best health possible prior to pregnancy. Diet and nutrition in the preconception phase is an important aspect of preconception care. Growth and development targets for children, and the consequent reduction in their risk of non-communicable disease in adulthood, could be achieved through improving women's nutritional status and health behaviour before conception.

Several factors influence nutritional status like genetics, environment, lifestyle habits, any disease or physiological stressors and drug-toxicant exposures. Among the overweight or underweight females, there is a substantial risk to maternal and child health. There have been studies around the world that have shown that with decrease in overweight and obesity owing to preconception nutrition care, maternal and foetal outcomes improve. Despite the improvement in underweight among females, it has been observed in various studies that micronutrient deficiency (Vitamin A, Zinc, iodine, iron and calcium) persists, especially in the low- and middle-income countries (LMIC). In various studies and systematic reviews regarding micronutrient supplementation among expectant females, only modest benefits in maternal and child health improvement have been observed. It was reported that supplementation during pregnancy replete maternal body store of the micronutrient but effects on child health are minimal. Keeping this in mind, studies providing micronutrient supplementation before conception were conducted and no effects were found on birth weight unless the supplementation started three months before pregnancy or among those who were not underweight.

The following components of nutrition care process have been suggested:

- Assessment of nutrition, anthropometric data and adequacy and quality of dietary habits (including dietary supplements).

- A nutrition diagnosis to identify and label any nutrition-related problems or risk factors.
- The nutrition intervention, wherein the individual's dietary goals and plan of action are established, and care is delivered with the emphasis on appropriate weight gain, consumption of a variety of foods, appropriate dietary supplement use, and physical activity.

Improving the maternal and foetal health outcomes through preconception nutrition improvement, population level interventions need to be carried out<sup>2</sup>. The intervention strategies to be carried out are broadly divided into three categories:

- *Supplementation and fortification*- Protein, energy and micronutrient supplementation and fortification of food before conception has been shown to improve maternal and foetal outcomes.
- *Cash transfers and incentives*: None of the studies identified investigated the effects of preconception cash transfers on birth or nutritional outcomes. However, cash transfers are effective in improving school enrolment and attendance among girls, access to preventive health care, and household food consumption in low-income settings. These factors are risks for poor birth and nutritional outcomes, suggesting that preconception cash transfers could be useful.
- *Behaviour change interventions*: Mixed effects on pregnancy outcome and health status of children were observed in various studies around the globe by using this strategy.

**Conclusion:**

A dual strategy targeting women and couples planning a pregnancy, coupled with promoting the health of all women of child-bearing age, could be the most effective approach to improving preconception health. Further research should be conducted in the area of pre-conceptual nutrition. |Scientifically robust and context-relevant trials of preconception nutrition and health behaviour interventions can help in generating evidence about the effectiveness in improving outcomes for mothers and babies on a large scale.

## **Gap assessment study for introduction of Maternal, Infant and Young child Nutrition in Undergraduate Medical Curriculum**

**Dr. Zakirhusain Shaikh, Prof. Rambha Pathak (HIMSR, New Delhi)**

Over the years, the knowledge, skills and policies in the domain of MIYCN have undergone significant changes. However, the medical curriculum has not evolved in sync with this change. The main challenge in medical curriculum was that with increasing medical knowledge to be covered in 4.5 years, there is no scope for having a separate modular capacity building on MIYCN. Thus, it was necessary to build upon the strengths of the existing curriculum and integrate a few additional missing pieces, so that it is sustainable with respect to the three most important resources- time, money and human resource. Thus, while modifying the curriculum, the underlying principle was to not increase the teaching hours and required resources a lot, as anything contrary to it would have led to decreased acceptance of this from the college administrators, thus defeating the whole purpose.

This gap assessment was done as part of the Project funded by Alive and Thrive at Hamdard Institute of Medical Sciences and Research (HIMSR). The project aims to create a scalable and replicable model of curricular integration of MIYCN.

### **OBJECTIVES:**

- I. To assess the teaching in terms of content and number of teaching hours related to maternal, infant and young child nutrition (MIYCN) in the current undergraduate medical curriculum
- II. To find out various teaching-learning methods being adopted by the related departments to teach MIYCN.
- III. To study the assessment methods currently being used by the departments in MIYCN.
- IV. To find out the weightage given to MIYCN in Assessment
- V. To suggest a model for integrated teaching on MIYCN
- VI. To assess learning outcomes in cognitive domain in MIYCN with the current curriculum on MIYCN
- VII. To identify skills and competencies to be acquired by medical students related to MIYCN

As part of the Gap Assessment, a team of 9 consultants from Departments of Community Medicine, Obstetrics & Gynaecology and Paediatrics conducted a meeting in which a thorough review of the current curriculum on Maternal, Infant and Young Child Nutrition was done. Another brainstorming session was also conducted to discuss the changes required in the existing curriculum in order to make students competent in MIYCN. In order to carry out 360° evaluation of the current teaching practices on MIYCN, a feedback from students was also taken on a self-reporting anonymous questionnaire. The summary of the findings is as below-

## ASSESSMENT OF CURRICULUM ON MIYCN

Table 1: Number of hours taught in theory in the current curriculum on MIYCN

Subject	Theory classes (total hours)		Proportion of total theory hours in the subject		Practical Classes (Total Hours)		Proportion of total practical hours in the subject	
	Taught earlier	Proposed	Taught earlier	Proposed	Taught earlier	Proposed	Taught earlier	Proposed
Community Medicine	31/180	36/180	17%	20%	31/214	42/214	14.5%	20%
Obstetrics and Gynecology	10/300	20/300	3.3%	6.7%	27/390	39/390	6.9%	10%
Pediatrics	8/100	10/100	8%	10%	30/150	40/150	20%	27%

As part of this Gap Assessment, feedback was sought from Medical students to improve the curriculum in terms of – cognitive knowledge, skills learning and assessment. Students of MBBS 2012 and 2013 Batch, were recruited to provide feedback. They were chosen because they were the latest to complete their studies in all the three concerned subjects. We had a total of 168 respondents. The students were also asked to attempt answering 35 questions covering various topics of MIYCN across the three subjects of Community Medicine, Gynecology and Obstetrics and Pediatrics. No prior information was provided regarding this, so students had no time to revise and prepare and answered based on knowledge which had been retained from previous teaching-learning.

The first question was if a particular topic concerning MIYCN has been taught during MBBS. For the sake of analysis, a topic was taken as said to be taught, if at least 75% of the respondents said so. For not being taught, >25% saying so was taken as the cut-off.

Of the topics mentioned in a list (compiled by the expert consultants), all but three topics were said to be taught, as mentioned in the table below.

Those topics were

- Indicators of measuring IYCF
- Sustainable Development Goals and World Health Targets on Nutrition
- Global conventions and legislations in IYCF

Then, the second question was that if the topics were taught, then whether they were given low, moderate or high importance. The following topics were said have been given low importance and need to further emphasis in modified curriculum.

- Sustainable Development Goals and Global Targets on Nutrition
- Global conventions and legislations in IYCF

- Behavior change for improving nutrition
- Feeding an infant/child during and after illness

Next, the question asked was if a particular teaching-learning method was used in imparting theoretical knowledge in MIYCN.

The two commonly used methods were Lectures and Seminars, while some newer and more interactive methods were reportedly not used, as mentioned by >25% of the responders. These methods were-

- Small group discussions
- Case-based learning
- Medical quiz
- Reflections Writing
- Flipped Classroom

Similar question was raised pertaining to teaching of skills and attitudes. The method which was reportedly not used was Roleplay.

Also, it is well-established that Assessment drives learning. So, even if something is taught by spending great amount of time, but not assessed enough, then it is not likely to be learnt by the students. Hence, it was tried to find out how much weightage is given to MIYCN topics in the assessment. For this a review of the last main professional examination in the respective subjects was conducted. This could only be done for written examination, as for practical and oral examination, it is variable and subjective. Later on, extensive exercise of determining weightage of topics of MIYCN was done to create a blueprint of assessment. This would act as a guide for giving required weightage to these topics in written assessment

*Table 8: Marks for MIYCN topics*

<b>Subject</b>	<b>Total marks of questions from MIYCN</b>	<b>Proposed Total marks of questions from MIYCN</b>	<b>Proportion of total marks in the subject</b>	<b>Proposed Proportion of total marks in the subject</b>
Community Medicine	21/120	24/120	17.5%	20%
Obstetrics and Gynecology	4/80	10/80	5%	12.5%
Pediatrics	5/40	8/80	12.5%	15%

As discussed, just teaching is not sufficient but a topic should also be assessed so that its importance is perceived by students. In this regard, the next question was if a particular topic concerning MIYCN was assessed during MBBS in any concerned subject.

So, the following topics were said to not have been assessed by more than 25% of the responders. It can also be deduced that most of these topics are those that had not been reportedly not taught or not given adequate importance in teaching.

- Global conventions and legislations in IYCF
- Indicators for measuring IYCF
- Behavior change for improving nutrition
- Energy density of infant foods
- Feeding an infant/child during and after illness

Similarly, Internship is a crucial phase for practicing what has been learnt in real-life case scenarios. Incorporating the learning of skills and attitudes concerning MIYCN in Internship is crucial to having a skilled and empathetic Indian medical graduate. Thus, a review of the Internship Logbook was done to see what all skills concerning MIYCN are being observed and performed during internship in the respective department. This could not be exhaustive as not every skill and attitude learnt can be documented in Logbook.

Table 13: Logged skills in internship - Community Medicine - 2 months

SN	Activity	Observe	Perform under supervision
1	ANC history and Examination	10	10
2	PNC history and examination	10	10
3	Under-5 examination and counselling in Well baby clinic	15	15
4	Health Education in OPD setting	2	4
5	Anthropometry in under-5	4	20
6	Counselling- Group & Individual in community setting	0	10
7	Adolescent girls' clinic	5	5

Table 14 : Logged skills in Internship - Pediatrics - 1 month

SN	Activity	Perform under supervision
1	Anthropometric measurements	10
2	Development Assessment	5
3	Lactation Counselling	5
4	Feeding of Preterm baby	5

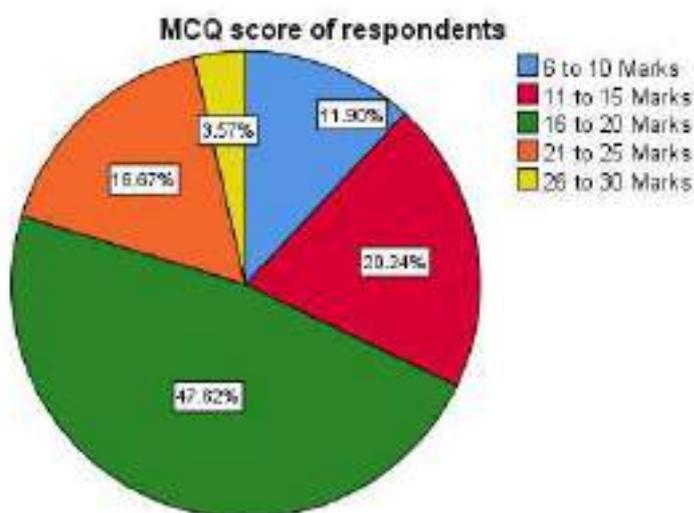
*There were no logged skills pertaining to MIYCN explicitly mentioned in the posting of Gynecology, Obstetrics and Family Welfare.*

After this analysis, brainstorming was done, with the proposed curriculum in hand, as to what extra skills are needed to be incorporated in internship training. The following table enlists the same.

Table 15: Proposed logged skills in Internship

Subject	List of Proposed Skills directly concerning MIYCN, to be included in Internship Logbook
Community Medicine	<ol style="list-style-type: none"> <li>1. Community Survey on Minimum Diet Diversity for Mothers, Infants and Children</li> <li>2. Assessment of Minimum Meal Frequency for Infants and Children</li> <li>3. Dietary counselling of Anemic Women</li> <li>4. Dietary counselling of anemic under-five child</li> <li>5. Performing Screening of Anemia amongst Pregnant females and under-five children using Sahli's method or Hemocek</li> <li>6. Nutritional Counselling of Adolescent girls</li> <li>7. Counselling on Exclusive Breastfeeding</li> <li>8. Counselling on Complementary Feeding</li> </ol>
Obstetrics and Gynecology	<ol style="list-style-type: none"> <li>1. Nutrition counselling to antenatal women</li> <li>2. Nutrition counselling to postnatal women</li> <li>3. Breastfeeding counseling</li> </ol>
Pediatrics	<ol style="list-style-type: none"> <li>1. Counselling regarding breastfeeding, KMC and complementary feeds</li> <li>2. Gavage and katori-spoon feeds in preterm and LBW babies.</li> <li>3. Recipes of making nutrient-rich complementary feeds based on available local food</li> <li>4. Diet in severe malnutrition and during acute illnesses</li> <li>5. Correct attachment and positioning for breastfeeding</li> </ol>

In the next section of the questionnaire, their knowledge regarding MIYCN was tested using a set of 35 single best response Multiple-choices questions. Giving one mark for each correct response the maximum marks that could have been scored were 35. Since the scores were varying a lot, median was used as a measure of central tendency. The median score of the interns was 17.5 marks.



**Conclusions and Recommendations:**

The existing curriculum proposed by MCI is lacking in some crucial topics of MIYCN in Theory, Practical and Internship. Similarly, the assessment of MIYCN topics is not as per their weightage and importance. This translates in to poor acquisition of knowledge and skills in the Indian medical graduate.

A reformative curriculum which integrates the learning of MIYCN knowledge and skills through integration via the concerned subjects of Community Medicine, Gynaecology & Obstetrics and Paediatrics is needed to produce a cadre of healthcare workers who can effectively work towards decreasing maternal and child mortality .



# FEEDING PRACTICES AND BEHAVIOUR RELATED TO CHILD NUTRITION IN UTTAR PRADESH:

## SUMMARY OF FINDINGS

### BACKGROUND

Uttar Pradesh (UP), the most populous Indian state, has 29.73 million children, in age group 0-6 years the largest number of children in any state in India. Undernutrition is the underlying contributing factor in about 45 percent of all child deaths worldwide. The state has poor morbidity and mortality indices having high maternal mortality, neonatal mortality rate, infant mortality rate and under 5 mortality rates much higher than the national average.

Optimal infant and young child feeding and maternal nutrition is recognized as the most effective set of interventions to reduce child deaths and disease, prevent malnutrition and have a major role in determining the nutritional status of the child<sup>3</sup>. However, the burden of undernutrition remains high in UP with 46% < 5-year children being stunted, 39.5% being underweight, 17.9% being wasted and 6% being severely wasted. The progress of coverage with infant and young child feeding interventions is below desired levels with only 1 in 4 children <3 years being breastfed in first one hour of life though 2 in 3 are born in health facilities. Around 2 in 5 children under 6 months were exclusively breastfed. Timely introduction of complementary feeding declined from 41% to 32.6% over the last decade. Only 5% children between 6-23 months received an adequate diet (NFHS 4 2015-16).

While maternal nutrition is the foundation stone for healthy growth and development of the newborn, over half of the pregnant women were anaemic in the state, only around 1/4<sup>th</sup> of pregnant mothers underwent 4 antenatal check-ups and just 13% consumed at least 100 IFA tablets during pregnancy.

In view of above, a qualitative study was conducted to explore feeding practices in the first 1000 days

Maternal and Child Mortality Indicators		
	National	Uttar Pradesh
Maternal Mortality Ratio	167	285
Neonatal Mortality Rate	25	31
Infant Mortality Rate	34	43
Under 5 Mortality Rate	43	51

*Source: Sample Registration System Report 2013. SRS 2015; SRS 2016*

from pregnancy to 24 months of age

### STUDY SAMPLE AND PURPOSE

Through May – August 2016, Department of Paediatrics, King George's Medical University, Lucknow conducted a qualitative study under the leadership of Professor Shally Awasthi with support from Alive & Thrive. The objective of the study was to understand feeding practices and behaviours related to young child nutrition. Specifically, the



<sup>3</sup> Lancet, 2013

study aimed to understand how size at birth, infant feeding related events/choices and feeding during and after illness were linked to the decline in a child's nutritional status.

The study was conducted in three high priority districts of Uttar Pradesh - Barabanki, Sitapur and Hardoi using case study method and documentation of perceptions of household members and caregivers. In-depth interviews (IDIs) were conducted with mothers of 12 children with SAM (severe, acute, malunion) who were admitted in Nutrition Rehabilitation Centres (NRCs) of the district hospitals. Mothers of 24 age-matched, well-nourished children were interviewed from the same village as the SAM children. Case stories of 12 malnourished children were also compiled. Focus Group Discussions (FGDs) were conducted with 72 grass-root level health care providers namely AWWs and ASHAs<sup>4</sup>.

Qualitative data from IDIs and FGDs were transcribed and codified based on emerging themes and concepts and frequencies measured using SPSS 15 (Chicago, IL) statistical tools.

## KEY FINDINGS

### I. MATERNAL HEALTH & NUTRITION CARE PRACTICES

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- One of the major determinants for low birth weight in middle and low-income countries is poor maternal nutritional status (low BMI) at conception. The study shows that 75% mothers of malnourished children had low Body Mass Index (BMI) at below 18.5 while only 33.3% mothers of well-nourished children were underweight. Significantly, mothers who were underweight were more likely to have malnourished children ( $p=0.05$ ).
- Most mothers were not aware of the importance of antenatal check-up and consumption of IFA tablets during pregnancy. Nearly 30% of the mothers did not consume even a single IFA tablet during pregnancy.
- 75% of the women who were interviewed had fallen ill at least once during pregnancy. Higher proportion of mothers of malnourished children (88.9%) fell ill during pregnancy compared mothers of well-nourished children.
- Out of the 7 malnourished mothers who provided information on birth weight, four out of the seven new-borns were low birth weight (<2.5kg) at birth.
- Birth spacing of malnourished children was less compared to well-nourished children but the difference was not statistically significant ( $p=0.32$ )
- Malnourished children tend to be on higher birth order than well-nourished children and birth spacing of malnourished child was less as compared to well-nourished child. However, there was no significant association between birth order and birth spacing of malnourished and well-nourished children ( $p=0.063$ ).
- Most mothers of malnourished children reported having regular or routine diet during pregnancy, with some even eating less than usual and only one mother reported increasing her intake. However, most were aware of the importance of good diet, adequate rest and need for avoiding hard work during pregnancy. Mothers of well-nourished children had more information on diverse diet and increased frequency of meals during pregnancy.

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*“Ghutti` is beneficial for the child. It is good for the stomach as the child does not have loose motions. Milk is easily digested and thus the child sleeps peacefully. Child does not spit out milk” (Mother of UN child, Sitapur)*

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### II. INFANT AND YOUNG CHILD FEEDING PRACTICES

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#### Early initiation and exclusive breastfeeding

- Importance of early initiation and exclusive breastfeeding was not understood and prelacteal were commonly given to new-borns. Most mothers (mothers of well-nourished as well as malnourished

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<sup>4</sup> Ethical approval of institutional ethics committee of KGMU, Lucknow (vide 9335/Ethics/R.Cell -16 dated 04/02/2016) and FHI 360's Protection of Human Subjects Committee (PHSC) or the Office of International Research Ethics (OIRE) was obtained.

children) cited that pre-lacteals are 'good for the health of the baby' and 'help develop immunity of the child.'

- Only 42.9% initiated breastfeeding within an hour after birth, though most births took place in health facilities. Most mothers had fed pre-lacteals such as honey, 'ghutti', sugar water, water, jaggery water, animal milk to the child during the first three days of birth. Neighbours, family members' and relatives' advice on pre-lacteals was the major driver for this practice.
- Few mothers of undernourished children admitted not breastfeeding but giving only animal/formula milk to the neonate.

#### **Partial breastfeeding practiced**

- Although most respondents agreed that breastmilk was good for the child, but they were not able to cite specific advantages of breastfeeding-why breastfeeding should be exclusive and what could be the possible implications of non-exclusive breastfeeding esp. of adding water. Exclusive breastfeeding was not practiced till 6 months of age and 3/4<sup>th</sup> of under nourished and most well-nourished children were fed animal milk/water along with breast milk.
- 1/4<sup>th</sup> of mothers of malnourished children and some mothers of well-nourished children gave only formula milk and did not breastfeed their children in instances where mother had 'insufficient milk' and animal milk was not available". Some other reasons cited for giving animal/formula milk were illness of the mother, pain caused by "sore breasts", child unable to breastfeed as ill/ "very weak" since birth.
- Awareness on IMS act continues to remain low amongst the health professionals. None of the mothers reported making the decision to buy formula milk on their own but were advised by health care providers.

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*"My breastmilk came out very less. Still, somehow, I squeezed some milk out with my hands and fed the child. My mother-in-law also helped me in this. My daughter could only be fed using spoon-bowl and by opening her mouth by our hands. One day, my mother-in law decided to take my daughter to a doctor. I don't know if the doctor admitted my child or not as I was also not feeling well at that time and was at home. My daughter was fed milk available in box (formula milk) after that"*  
(Mother of UN child, Hardoi)

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*'Annaprashan` (ceremony to initiate feeding cereals to the infant) was the most popular infant related custom reported. This custom was organized between 3-6 months which varied from family to family. It was generally seen as a symbolic custom and was not linked to regular intake of semi*

#### **Complementary feeding**

- Complementary feeding is critical as during this age group there is an onset of undernutrition. However, most families do not understand complementary feeding and there is limited access of mothers and families to the health workers during this stage.
- 1/3<sup>rd</sup> of malnourished children were not fed semi-solid/solid food properly at age 6-11 months and were only on liquid diet like milk, rice starch or pulse water. Comparatively, only 13.6% well-nourished children were not fed semi solid/solid food at this age.

#### **Lack of Family Food Diversity due to Poverty & Ignorance**

- The concept of dietary diversity was poor among mothers of both malnourished and well-nourished children. Most mothers of malnourished children believed that commercially available biscuits, chips, snacks were good for the child, convenient to feed and filled the stomach easily. Use of infant cereals was not reported.
- Well-nourished children were fed more diverse varieties of food compared to malnourished children. Diet of well-nourished children included porridge, 'khichdi' (pulse and rice cooked together with oil and given in semi solid form), 'daliya` (cracked wheat), bread, pulses, rice etc. Few mothers of malnourished

child reported giving only biscuits. Eggs, non-vegetarian food and nuts were fed only occasionally as they were considered expensive.

- It is worth noting that none of the respondents reported giving the panjiri distributed by the AWW.

#### **Quantity & Frequency**

- Most malnourished children were being fed less quantity of diet compared to well-nourished children in both age groups of 6-11 months and 12-23 months. However, the amount fed to both groups did not match international recommendations. Some under nourished children were reportedly fed less than 1/4<sup>th</sup> of standard bowl and few only few spoons of complementary foods every day. Parents cited the reason as “child was lethargic most of the time” or “seemed disinterested” in eating. Most well-nourished children had at least 1/4<sup>th</sup> of standard bowl and few had less than 1/4<sup>th</sup> of standard bowl.
- In most families, the child shared mealtime with family members and ate from the plate of adults. The reasons cited for not feeding separately included “child was too small to eat”, “child does not eat anything”, and that the child was not eating proper solid/semi-solid.
- Meal frequency also did not match international recommendations. Mothers of malnourished children in age group 12-23 months believed the child should be fed two times a day while mothers of well-nourished children believed child should be fed at least three times a day.

#### **Difficulties faced in complementary feeding**

- Introduction of complementary foods is challenging both for the mothers and the child as it is a huge change in terms of the taste of food and requires new skills of swallowing. When faced with difficulty in feeding and the child either did not take the food or vomited it out, mothers resorted to feeding the child forcefully or giving only milk. Contact with village-based doctor or the ANM were not found to be helpful.
- The other issue related to complementary feeding is that mothers have no role in decision-making regarding food and usually do not obtain food items from the market. Food related decisions and purchase of food are usually done by the father or grandmother.

#### **Hygiene practices related to complementary feeding**

- Respondents had some understanding of the concept of hygiene. Very few respondents mentioned hand washing as part of practice related to feeding. The community health workers believed that families of malnourished children had poor personal hygiene and sanitation that caused frequent illness.

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*“If the child is not ill, but only undernourished, then he is not taken anywhere for treatment. Community says that my child is eating well, he is ok, why go to the doctor? According to them, under nutrition is not a serious condition” (AWW, Sitapur)*

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### **III. INFANT HEALTH**

#### **Under nutrition not recognised as a health hazard**

Mothers of malnourished children could make out the small size of the child at birth. Malnourished children suffered from repeated illness and had statistically significant longer duration of illness. Illnesses were followed by decreased appetite, which was considered normative. Unqualified health care seeking was preferred for illnesses. There was no health care seeking for malnutrition unless accompanied by illness. Also, immunization of malnourished children was incomplete, increasing the risk of infections.

#### **Birth to first 30 days**

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*“In families of an undernourished child, the younger child is not fed separately. Two siblings eat from the same plate. The older one eats fast and very little is left for the younger child. It may cause the younger one to be undernourished. Another reason for undernourishment is that people do not get their children immunized. Caregivers that are careless and untidy often have undernourished children” (ASHA in FGD-Barabanki)*

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- One third of malnourished children fell ill in first 30 days of birth as opposed to one fourth of the well-nourished children, a small proportion of malnourished children who fell ill showed severe conditions such as convulsions, bluish discoloration of lips, inability to feed and altered sensorium.
- All well-nourished sick children and most malnourished sick children were taken to private doctors. All well-nourished sick children recovered after illness and in contrast, most malnourished sick children improved slowly. The health care providers gave no feeding related advice to the caregivers.

#### **1-6 Months**

- 91.66% of malnourished children fell ill between 1-6 months and average duration of illness for malnourished children was 4.46 days and well-nourished children 3.06 days. Duration of illness was statistically associated ( $p=0.05$ ) with malnourishment of children (age group 1-6 months). Most of children suffered from diarrhoea. Health care was sought mainly from unqualified health care practitioners and very few from government health facilities.

#### **6-11 months**

- 80% malnourished children fell ill in age group 6-11 months. Duration of illness was not significantly associated ( $p=0.10$ ) with malnutrition in age group 6-11months.
- Most children in both groups suffered from fever followed by diarrhoea. Often illness in malnourished child was recurrent and the child seemed to “have never recovered completely”.

#### **a. 12-23 months**

- All malnourished children fell ill when they were in age group 12-23 months. Mothers of malnourished children shared that illness was often recurrent and led to feeding issues. Most common illness faced by children (12-23 months) were fever along with cough/cold, diarrhoea and fast breathing.
- In all the age groups and cases respondents were unable to explain the reason for frequent illnesses. They did not perceive that recurrent illness could be due to malnutrition. Health care seeking from government health care provider/facility was very low and caregivers sought health care from unqualified health care providers.

#### **b. Feeding during illness**

- There was no clear understanding on how best to feed the child during illness. Most mothers shared that diet either remained same or was reduced.

#### **c. Gender discrimination in feeding practices**

- Mothers opined that they do not discriminate between their male and female child but husbands, mother in laws or villagers tend to do so. Often girls are less frequently breastfed or not taken to health facility when sick. Mothers who gave birth to boys received special care and attention compared to those who had girls.

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*“My child did not feed therefore ANM advised us to take the child to the government doctor at block level hospital. However, we decided not to go as it required time. You can say nothing special was done by us”  
(mother of UN child, Hardoi)*

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- Mothers relied on multiple sources and multiple channels of communication for obtaining information. Family members especially the mothers in law or any other elder female member played a very important role in sharing information about child feeding.
- The frontline worker (ASHA/AWW/ANM) was the main source of information for most mothers of malnourished children in the age group 1-6 months.
- Although doctor was believed to be a trusted source and his advice was not questioned, however, advice from the doctor was limited to prescribing formula milk or infant cereal.
- Radio and television were other sources that imparted information to mothers on feeding.
- The frontline workers suggested that information imparted by them could be made more effective if husband and mother-in-law were also involved in spreading this message.

#### IV. REFERRAL OF MALNOURISHED CHILD

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- According to frontline workers malnutrition was not considered an illness by the mothers. Hence, delay in recognition of malnutrition. Malnourished children frequently fell ill and were then taken to a health care provider. Nutrition Rehabilitation Centre (NRC) was not preferred due to prolonged stay and associated expenses. Most of the malnourished children were brought to the NRC after health care seeking from unqualified health care provider.
- More ASHAs in comparison to AWWs identified and referred children. Few ASHAs referred the child to CHC from where they were either sent to district hospital/NRC to prescribe medicines and sent back home.
- There was dissatisfaction with the treatment in the NRCs due to shortage of medicines /diagnostic facilities. For most families, purchasing medicines from outside the government facility and getting investigations done from private diagnostic centres added to medical expenses.

#### V. IMPACT OF POVERTY AND EDUCATION OF MOTHERS ON MALNUTRITION

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##### **Lack of autonomy in female reproductive & general health issues**

- Mothers lacked autonomy in female reproductive issues. Short birth spacing caused early termination of breastfeeding and less care of the young child due to mother's health related complications (during pregnancy / "weakness" caused by frequent deliveries). Mothers also had limited role in choice of food purchased for the family. Husband/father-in-law went to the local market once a week/fortnight to buy essential food commodities. Their purchase was governed by food prices and availability of food in nearby market.
- According to frontline workers malnourished children often came from poor families with poor hygiene practices. Mothers who were educated took better care of the child, promptly sought health care, and brought the child for immunization and weighing regularly. They also sought advice of frontline worker and adhered by it. Better educated women also took better care of themselves during pregnancy and had smaller families.
- Analysis of the socio economic and demographic factors of the sample showed that the maternal age was not significantly associated with malnutrition. Half of the mothers were illiterate and 97.2% of them were housewives. Although the fathers were better educated compared to mothers but education of father was not significantly associated with nutrition status. Even the difference in occupation between malnourished and well-nourished father was not statistically significant.

## EMERGING THEMES FOR WAY FORWARD

### *Focusing on maternal health & nutrition as foundation*

- Women who are at risk of having low birth weight children such as those women with low BMI and/or more than 3rd birth order, and/or spacing less than or equal to 24 months should be identified early on

during the ANC visits and appropriate actions including counselling on diet taken to ensure healthy pregnancy and safe childbirth.

- Pregnant women, their family members and the community needs to be aware of the prescribed number of ANC visits and motivated to attend them.
- Counselling of pregnant women and her family members (husbands & mother in laws) on importance of adequate weight gain, benefits of IFA and Ca consumption along with support to ensure compliance and on need of adequate and diverse diet using locally available food during pregnancy is essential during home visits and outreach/VHSND contacts made by frontline workers.

#### *Addressing the unfinished agenda of ensuring early and exclusive breastfeeding*

- Culturally appropriate messages for early initiation of breastfeeding with strong emphasis to avoid pre-lacteal must be given to the woman and family members during ANC visits, at community events and reinforced by the frontline workers during home visits.
- Peer network and support for women could be generated to support exclusive breastfeeding with emphasis on avoidance of giving water to <6month child

#### *Prioritizing efforts for improving complementary food and feeding at family level through behaviour change*

- Frontline workers need to prioritize counselling /coaching mothers and family members on timely, diverse and adequate complementary feeding practices.
- Demonstration of meal preparation, in adequate quantity, consistency and using diverse nutrient -rich food items using locally available food and proper way to feed the child using utensils and materials from the household kitchen needs to be undertaken by the frontline workers during home visits or at community/outreach events to help build skills and confidence among mothers and family members.
- Promotion of homemade recipes for complementary food is required in the community to counter mass appeal of commercially available snacks like biscuits, bread, chips etc.
- Complete immunization and timely care seeking from qualified providers needs to be promoted. After each illness episode feeding advice must be reinforced with supervision by frontline workers for compliance.

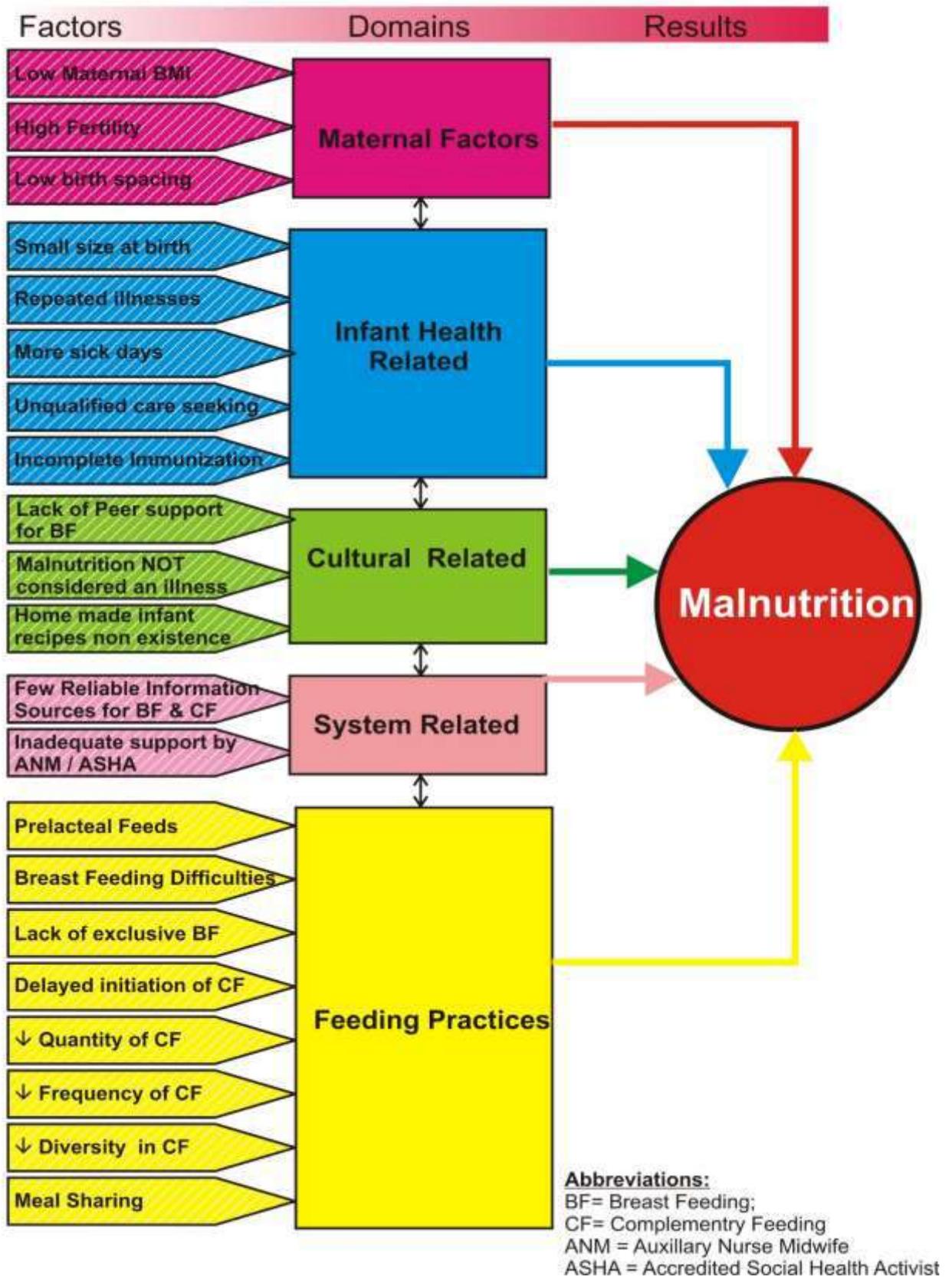
#### *Improving quality of counselling /content of contact by Frontline Workers through mentoring & performance support*

- Moving beyond trainings, the capacity of FLWs needs to be enhanced through continued practice focused mentoring for effective coaching , problem solving and negotiation with mothers and families to help bring change in maternal nutrition and IYCF practices.
- Operational guideline should be updated to specify number of home visits for different stages during the 1000-day period specially to address the lack of contact after 3rd month till completion of 9 months and integrate maternal nutrition and IYCF counselling as key content of home visits.

#### *Comprehensive approaches*

- Targeted, timely and consistent messages need to be delivered to pregnant women, mothers and families using all contact points such as ANC visits, home visits, immunization sessions, sick child visits and community events reinforced by social mobilization events involving entire community eps. community leaders & opinion formers to shift social norms around maternal nutrition and infant and young child feeding.
- Pre- service and in- service medical education curriculum need to be strengthened with prioritization of MIYCN content and focussed on building skills of all health care providers in counselling.

## Complex Pathway of Malnutrition in Young Infants



## **MAA (Mothers' Absolute Affection) program – An update**

Dr Pragya Kumar, Dr Ditipriya Bhar (AIIMS Patna)

Mother's milk is the best possible nutrition available for a new born. Initiation of breast feeding within one hour of birth and continuation for 6 months exclusively and there after till 2 years of age help in establishing child's growth and development. The timely initiation of breast feeding could avert 20% of neonatal deaths and 13% of under-five deaths each year. For India, breastfeeding can reduce 156,000 child deaths every year.

NFHS 4 India data showed that, only 41.6% of under 3 years children are breast fed within one hour of birth and only 55% of children are exclusively breast fed. Hence, to provide optimal IYCF (Infant and Young Child Feeding) practices in the health facilities IYCF counselling centres (IYCF-CC) have been established throughout the country.

To establish successful breastfeeding in infant, support of family members and community is essential. Hence, to strengthen the community level promotion of breast feeding among pregnant and lactating mothers, MAA (Mothers' Absolute Affection) Programme was launched at the national level on 5th August 2016. This program has been launched to bridge the gap of providing quality and continuous support to the mothers from every area of her life. 'MAA' Programme aims in sensitizing the community and family members of pregnant and lactating mothers towards breast feeding and encourages creating an enabling environment for promotion and continuation of optimal breast feeding. This program has been running under National Health Mission since 2016. Till 2017, 23 States have started implementing various activities under MAA programme such as one day sensitization of health staffs, convergence meetings with line departments, Infant and Young Child Feeding (IYCF) training of staffs at health facilities, communication activities using mass media and mid-media etc.

In Bihar 'MAA' programme has been launched in December 2016. Currently, MAA' Programme is running in all 38 districts in Bihar. In Himachal Pradesh it has been launched in April 2018.

- **Core components of 'MAA' Programme:**

- Creating an enabling environment and demand generation through community awareness.
- Community level activities for promoting and supporting breastfeeding practices through community health care providers (ASHA).
- Capacity building on IYCF and health care providers.
- Monitoring and awards.

### **Progress in Bihar**

- Currently, there are 68 fully functional IYCF-CC in Bihar. An additional 83 IYCF-CC are proposed and approved in 2018-19. It has been aimed to establish at least 2 IYCF-CC per district at the level of district health facilities in Bihar.
- Each week mothers' meetings are held by ASHA in majority of villages of 38 districts. Dedicated funds are being allotted for these activities. "Healthy Baby Shows" are being arranged on the occasion of 'World Breast feeding Week' every year.
- Capacity building of ASHA and anganwadi worker (AWW) on promotion and support of breast feeding are being organized throughout the state of Bihar since April 2017. Till now out of 88000 ASHA in Bihar 75-80% have already been sensitized for this programme. In the year of 2018, 36000 ASHA have been trained on breastfeeding practices. AWW also attended the one-day sensitization session along with ASHA.
- The ANM of subcentres were trained by a 4-day training on IYCF. By December 2018 training of 16068 ANM out of 17856 were already been completed in Bihar.
- In Bihar for training of health care providers, a panel of 292 master trainers are already been prepared. Doctors, professionals and staffs from government sector, private partners and medical colleges were included in the panel. Also, a seven days Training of Master Trainers being arranged in 2017 during the initiation phase of program. There after each year 'Refresher training' of master trainers are being organized.

To successfully breastfeed a child the responsibility lies not only with the mother but also with the entire family and community and health care providers. By enhancing the communication skills of community health care providers, providing counselling to the pregnant and lactating mother and families through repeated meetings during antenatal period, at the time of delivery and during postnatal period we can create an environment that promote, support and protect breastfeeding.

We invite articles for the newsletter. Please email a 800-1000 word article in a Word Document as an attachment to [miycn.iapsm@gmail.com](mailto:miycn.iapsm@gmail.com)

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